



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/522,998

08/11/2005

Lars Daehne

ZIMR/0015

4632

26290 7590 04/23/2009
PATTERSON & SHERIDAN, L.L.P.
3040 POST OAK BOULEVARD
SUITE 1500
HOUSTON, TX 77056

EXAMINER

LIU, SUE XU

ART UNIT

PAPER NUMBER

1639

MAIL DATE

DELIVERY MODE

04/23/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/522,998	Applicant(s) DAEHNE ET AL.	
	Examiner SUE LIU	Art Unit 1639	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 January 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 26-50 is/are pending in the application.
- 4a) Of the above claim(s) 43, 49 and 50 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 26-42 and 44-48 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>2/2/05</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Status

1. Claims 1-25 have been cancelled.
Claims 26-50 are currently pending.
Claims 43, 49 and 50 have been withdrawn.
Claims 26-42 and 44-48 are being examined in this application.

Election/Restrictions

2. Applicant's election with traverse of Group 1 (claims 26-48) in the reply filed on 1/12/09 is acknowledged. The traversal is on the ground(s) that there is no undue search burden. This is not found persuasive because these inventions lack the same or corresponding special technical feature under PCT Rule 13.2, and do not relate to a single general inventive concept under PCT Rule 13.1, as set forth in the previous Restriction Requirement. Regardless of "search burden", as long as there is a finding of a lack of unity, the Restriction Requirement is proper under PCT Rule and/or 35 USC 371. In addition, Claims 49 and 50 are improperly dependent on the instant claim 1.

The requirement is still deemed proper and is therefore made FINAL.

3. Claims 49 and 50 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected inventions, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on 1/12/09.

4. Applicant's election with traverse of the following species:

A.) one layer;

B.) two;

C.) fluorescent dye;

D.) without additional layers;

E.) with a solid core;

in the reply filed on 1/12/09 is acknowledged. Applicant's argument regarding undue search burden is not persuasive. There is no requirement for showing "undue search burden" under lack of unity restriction. In addition, species selection only serves as a starting point for examination. That is if the selected species is allowable, then the examination of the next species in the list will be conducted. Accordingly, Claim 43 is withdrawn due to non-elected species.

Priority

5. This application is filed under 35 U.S.C 371 of PCT/EP03/08376 (filed on 07/29/2003).

6. Receipt is acknowledged of papers (Germany 10236409.5; Germany 10315846.4) submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

7. Should applicant desire to obtain the benefit of foreign priority under 35 U.S.C. 119(a)-(d) (Germany 10315846.4) prior to declaration of an interference, a certified English translation of the foreign application must be submitted in reply to this action. 37 CFR 41.154(b) and 41.202(e).

Art Unit: 1639

Failure to provide a certified translation may result in no benefit being accorded for the non-English application.

Information Disclosure Statement

8. The IDS filed on 2/2/05 has been considered. See the attached PTO 1449 form.

Specification

Abstract

9. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

In addition, the term "Figure 8" included at the bottom of the Abstract is also improper.

10. The disclosure is objected to because of the following informalities: The section of Brief Description of Drawings appears to missing from the instant specification. (see MPEP 608.01(f)).

Appropriate correction is required.

Art Unit: 1639

11. Applicants are also invited to update the continuing data (benefits claimed under 35 USC 119, 120, etc.) in the first line of the specification.

12. The specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification. MPEP 608.01.

Claim Rejections - 35 USC § 112

13. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

14. Claims 31 and 39 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 31 recites “wherein at least one dye are a dye of higher absorption energy (donor) and a dye of lower absorption energy (acceptor)” which recitation is unclear and renders the said claim indefinite. The phrase “at least one” can be interpreted to mean one or more than one (such as two, three, or more). If the said claim is interpreted to mean three or more, the said phrase “at least one” would conflict with the rest of the claim reciting only two dyes (one as donor and another as the acceptor). Thus, one of ordinary skill in the art would not be able to apprise the metes and bound of the instant claimed invention.

Art Unit: 1639

Claim 39 recites “wherein the concentration of the at least one dye satisfies the relationship mass of sensitive material:mass of dye < 500:1” which recitation is unclear and renders the said claim indefinite. It is not clear if to what “relationship mass” the term is referring. It is also not clear to what “mass” the recitation is referring. Thus, one of ordinary skill in the art would not be able to apprise the metes and bound of the instant claimed invention.

Claim Rejections - 35 USC § 102

15. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Dai

16. Claims **26-35, 38, 40-42** and **45-48** are rejected under **35 U.S.C. 102(b)** as being anticipated by **Dai** et al (Adv. Mater. Vol.13(17): 1339-1342; 2001; cited in IDS).

The instant claims recite “a capsule, comprising: an envelope having a diameter of less than 100 μm , and the envelope comprising at least three polyelectrolyte layers, with at least one of these three polyelectrolyte layers being labeled with at least one dye.

Dai et al, throughout the publication, teach a capsule having multiple outer layers (e.g. Abstract)

For **claim 26**: The reference teaches capsules of multiple layers (or envelopes) (e.g. Scheme 1; p.1340 Figure 3; p.1341), which the capsule has a diameter less than 100 μm (e.g.

Art Unit: 1639

p.1341; Figure 2). The reference also teaches the capsules are composed of polyelectrolytes (e.g. Title; p.1340) and dyes incorporated on the layers (e.g. p.1341, last para). The Dai reference also teaches the layers are polyelectrolytes (e.g. p.1340, left col.). The reference teaches capsules comprising at least three layers (e.g. p.1340). The instant specification does not specifically define the phrase “

For **claims 27 and 33**: The reference teaches forming alternating layers of dyed and non-dyed layers (such as $(\text{PSS/IR})_4/\text{PSS}$, i.e. 4 alternating PSS/IR layers plus one outer PSS layer) (e.g. pp.1340-1341; Scheme 1).

For **claims 28 and 40**: The reference teaches the layers have thickness of 1.5 to 1.7 nm per single layer.

For **claims 29, 30 and 35**: The recitation of “swells or shrinks, with its thickness thereby being altered, where its environmental conditions changes” is a recitation of intended uses. The structure of the layers appear to the same as the instant claimed polyelectrolyte layers and thus would be capable of performing the intended uses without evidence to the contrary. The office does not have the facilities and resources to provide the factual evidence needed in order to determine and/or compare the specific activities of the instant application versus the reference. In the absence of the evidence to the contrary, the burden is upon the applicant to prove that the claimed composition is different from the one taught by prior art and to establish the patentable differences. See *in re Best* 562 F.2d 1252, 195 USPQ 430 (CCPA 1977) and *Ex parte Gray* 10 USPQ2d 1992 (PTO Bd. Pat. App. & Int. 1989).

For **claims 31 and 32**: The reference attaching different dyes on different layers of the capsule such as capsule of $(\text{PSS/IDC/PSS/IR})_n$ or $(\text{PSS/IDC/PSS/IR})/\text{PSS}$ (e.g. p.1340), which

Art Unit: 1639

the different dyes would inherently possess the properties of higher and lower absorption energy, and would be capable of being used for FRET.

For **claim 34**: The reference teaches various organic polyelectrolyte layers. (e.g. p.1340).

For **claim 38**: The reference teaches formation of aggregates (e.g. p.1341; left col., para 2).

For **claim 41**: The reference teaches the dye layers are formed by organic dyes (e.g. Scheme 2; p.1342, para 1).

For **claim 42**: The reference teaches various fluorescent dyes (e.g. p.1340)/

For **claim 45**: The reference teaches the capsule contains a solid core throughout the assembly process, and thus the product formed before removing the core read on the capsule possessing a solid core.

For **claim 46**: The reference teaches the multilayered particles have diameters such as 3.73 μm (e.g. p.1341; Figure 3).

For **claim 47**: The reference teaches the product-by-process limitation of layer by layer production (e.g. p.1339; Scheme 1).

For **claim 48**: The recitation of “the capsule is used for labeling...” is a recitation of intended uses. The structure of the capsule appears to the same as the instant claimed capsule and thus would be capable of performing the intended uses without evidence to the contrary. The office does not have the facilities and resources to provide the factual evidence needed in order to determine and/or compare the specific activities of the instant application versus the reference. In the absence of the evidence to the contrary, the burden is upon the applicant to prove that the claimed composition is different from the one taught by prior art and to establish the patentable

Art Unit: 1639

differences. See in re Best 562F.2d 1252, 195 USPQ 430 (CCPA 1977) and Ex parte Gray 10 USPQ2d 1992(PTO Bd. Pat. App. & Int. 1989).

Dai II

17. Claims **26-30**, **33-37**, **40-42** and **44-48** are rejected under **35 U.S.C. 102(b)** as being anticipated by **Dai** et al (Macromol. Rapid Commun. Vol.22 (11): 756-762; 2001).

Dai et al, throughout the publication, teach a capsule having multiple outer layers (see Entire Doc.)

For **claim 26**: The reference teaches capsules of multiple layers (or envelopes) (e.g. p.757), which the capsule has a diameter less than 100 μm (e.g. Figure 1). The reference also teaches the capsules are composed of polyelectrolytes (e.g. p.757) and dye labeled layers (e.g. p.757; right col.). The reference teaches capsules comprising at least three layers (e.g. Table 1; Figure 1).

For **claims 27** and **33**: The reference teaches forming alternating layers of dyed and non-dyed layers (such as (PAH-RhB/PSS)₄, i.e. 4 alternating PAH-RhB/PSS layers (e.g. p.760; Figure 1).

For **claims 28** and **40**: The reference teaches the layers have thickness of approximately 3 nm per single layer (e.g. p.761; Figure 2; left col., para 2).

For **claims 29**, **30** and **35**: The recitation of “swells or shrinks, with its thickness thereby being altered, where its environmental conditions changes” is a recitation of intended uses or inherent properties of the polyelectrolyte layers. For example, **Dahne** et al. (J. Am. Chem. Soc.

Art Unit: 1639

Vol.123; 5431-5436; 2001), teach “it is known that hollow PAH/PSS capsules shrink at higher temperatures” or swell under other conditions (e.g. Dahne, p.5433). The structure of the layers appear to the same as the instant claimed polyelectrolyte layers and thus would be capable of performing the intended uses without evidence to the contrary. The office does not have the facilities and resources to provide the factual evidence needed in order to determine and/or compare the specific activities of the instant application versus the reference. In the absence of the evidence to the contrary, the burden is upon the applicant to prove that the claimed composition is different from the one taught by prior art and to establish the patentable differences. See *in re Best* 562F.2d 1252, 195 USPQ 430 (CCPA 1977) and *Ex parte Gray* 10 USPQ2d 1992(PTO Bd. Pat. App. & Int. 1989). In addition, the reference teaches swelling of the capsule under certain conditions (e.g. p.761; right col.).

For **claim 34**: The reference teaches various organic polyelectrolyte layers. (e.g. p.757).

For **claims 35-37**: The reference the fluorescent dye is covalently linked to the polyelectrolyte layer (e.g. p.757) as evidenced by **Kaschak** et al (cited in Dai II for fluorescent dye labeling of polyelectrolyte; J. Am. Chem. Soc., Vol. 118: 4222-4223; 1996). As the reference teaches the polyelectrolyte layers have inherent properties of swelling (or shrinking) under various conditions, the electrolyte layers would read on the sensitive materials.

For **claim 41**: The reference teaches the dye layers are formed by organic dyes (e.g. pp.757+; Table 1).

For **claim 42**: The reference teaches various fluorescent dyes (e.g. p.757; Table 1).

For **claim 44**: The reference also teaches the permeability of the capsules (e.g. pp.760-761).

For **claim 45**: The reference teaches the capsule contains a solid core (such as the dye crystal core) throughout the assembly process, and thus the product formed before removing the core read on the capsule possessing a solid core.

For **claim 46**: The reference teaches the multilayered particles have diameters such as 10 μm (e.g. p.760; Figure 1).

For **claim 47**: The reference teaches the product-by-process limitation of layer by layer production (e.g. p.757).

For **claim 48**: The recitation of “the capsule is used for labeling...” is a recitation of intended uses. The structure of the capsule appears to the same as the instant claimed capsule and thus would be capable of performing the intended uses without evidence to the contrary. The office does not have the facilities and resources to provide the factual evidence needed in order to determine and/or compare the specific activities of the instant application versus the reference. In the absence of the evidence to the contrary, the burden is upon the applicant to prove that the claimed composition is different from the one taught by prior art and to establish the patentable differences. See *in re Best* 562F.2d 1252, 195 USPQ 430 (CCPA 1977) and *Ex parte Gray* 10 USPQ2d 1992(PTO Bd. Pat. App. & Int. 1989).

Dai III

18. Claims **26, 27, 29-34, 36-42** and **44-48** are rejected under **35 U.S.C. 102(b)** as being anticipated by **Dai** et al (Langmuir. Vol.18: 4553-4555; 5/9/2002; referred to as Dai III).

Dai et al, throughout the publication, teach a capsule having multiple outer layers (see Entire Doc.)

For **claim 26**: The reference teaches capsules of multiple layers (or envelopes) (e.g. p.4553), which the capsule has a diameter about 1 μm (e.g. p.4553). The reference also teaches the capsules are composed of polyelectrolytes (e.g. pp.4553-4554) and dye labeled layers (e.g. p.4553). The reference teaches capsules comprising at least three layers (e.g. Table 1; p.4554).

For **claims 27 and 33**: The reference teaches forming sandwich layers of dyed and non-dyed layers (e.g. p.4555).

For **claims 29, 30, 36 and 37**: The recitation of “swells or shrinks, with its thickness thereby being altered, where its environmental conditions changes” is a recitation of intended uses or inherent properties of the polyelectrolyte layers. For example, **Dahne** et al. (J. Am. Chem. Soc. Vol.123; 5431-5436; 2001), teach “it is known that hollow PAH/PSS capsules shrink at higher temperatures” or swell under other conditions (e.g. Dahne, p.5433). The structure of the layers appear to the same as the instant claimed polyelectrolyte layers and thus would be capable of performing the intended uses without evidence to the contrary. The office does not have the facilities and resources to provide the factual evidence needed in order to determine and/or compare the specific activities of the instant application versus the reference. In the absence of the evidence to the contrary, the burden is upon the applicant to prove that the claimed composition is different from the one taught by prior art and to establish the patentable differences. See *in re Best* 562F.2d 1252, 195 USPQ 430 (CCPA 1977) and *Ex parte Gray* 10 USPQ2d 1992(PTO Bd. Pat. App. & Int. 1989).

For **claims 31 and 32**: The reference teaches using “layer-by-layer” synthesis to produce polyelectrolyte layers with fluorescent labels that can be used for FRET analysis (e.g. pp.4553+), which the fluorescent dyes used can act as donor and acceptor (e.g. pp.4553+).

Art Unit: 1639

For **claim 34**: The reference teaches various organic polyelectrolyte layers. (e.g. p.4554).

For **claims 38** and **39**: The reference also teaches using high concentration of dyes and the dyes forming aggregates (e.g. p.4554; Abstract).

For **claim 40**: The reference teaches the layers have thickness of 15-20 nm per single layer (e.g. p.4553).

For **claim 41**: The reference teaches the dye layers are formed by organic dyes (e.g. pp.4554).

For **claim 42**: The reference teaches various fluorescent dyes (e.g. p.4553).

For **claim 44**: The particles of the reference also possess the inherent property of being permeable, because at least solvent molecules can sieve through to the interior of the particles.

For **claim 45**: The reference teaches the capsule contains a solid core throughout the assembly process (e.g. p.4553), and thus the product formed before removing the core read on the capsule possessing a solid core.

For **claim 46**: The reference teaches the multilayered particles have diameters such as 1 μm (e.g. p.4553).

For **claim 47**: The reference teaches the product-by-process limitation of layer by layer production (e.g. p.4553).

For **claim 48**: The recitation of “the capsule is used for labeling...” is a recitation of intended uses. The structure of the capsule appears to the same as the instant claimed capsule and thus would be capable of performing the intended uses without evidence to the contrary. The office does not have the facilities and resources to provide the factual evidence needed in order to determine and/or compare the specific activities of the instant application versus the reference.

Art Unit: 1639

In the absence of the evidence to the contrary, the burden is upon the applicant to prove that the claimed composition is different from the one taught by prior art and to establish the patentable differences. See *in re Best* 562 F.2d 1252, 195 USPQ 430 (CCPA 1977) and *Ex parte Gray* 10 USPQ2d 1992 (PTO Bd. Pat. App. & Int. 1989).

Claim Rejections - 35 USC § 103

19. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

20. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Dai II and Dai III

21. Claims 26-42 and 44-48 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Dai et al** (Macromol. Rapid Commun. Vol.22 (11): 756-762; 2001; referred to as Dai II), in view of **Dai et al** (Langmuir. Vol.18: 4553-4555; 5/9/2002; referred to as Dai III).

Art Unit: 1639

Dai et al, throughout the publication, teach a capsule having multiple outer layers, as discussed above. The rejection under Dai II above is hereby incorporated by reference in its entirety.

Dai et al do not explicitly teach one dye is of higher absorption energy and another of lower energy as recited in claims **31** and **32**. The reference also does not explicitly teach the concentration of the dye as recited in claims **38** and **39**.

However, **Dai II**, throughout the publication, teaches generating multiple polyelectrolyte layers (in a polyelectrolyte capsule) labeled with fluorescent dyes (e.g. Abstract). The reference teaches using “layer-by-layer” synthesis to produce polyelectrolyte layers with fluorescent labels that can be used for FRET analysis (e.g. pp.4553+), which the fluorescent dyes used can act as donor and acceptor (e.g. pp.4553+). The reference also teaches using high concentration of dyes and the dyes forming aggregates (e.g. p.4554; Abstract).

Therefore, it would have been prima facie obvious for one of ordinary skill in the art at the time the invention was made to label the appropriate layers of a capsule with fluorescent dyes and to use the appropriate concentrations of dyes.

A person of ordinary skill in the art would have been motivated at the time of the invention to label various layers of nanocapsules for use in FRET analysis, because Dai III teaches the advantages of incorporating different dyes to act as donor and acceptor for FRET analysis such that the labeled nanocapsules can be used for various biological applications (e.g. p.4555). In addition, because both the Dai references teach making nanocapsules with multiple layers labeled with fluorescent dyes for various purposes, it would have been obvious to one

Art Unit: 1639

skilled in the art to substitute one type of dye labeled layer for the other to achieve the predictable result of generating nanocapsule with the desired properties.

A person of ordinary skill in the art would have been motivated at the time of the invention to use fluorescent dyes with various concentrations, because Dai III teaches the need to optimize the dye concentration in the capsule so that the optimal concentration can be used for efficient FRET analysis (e.g. p.4554). Therefore, it would have been obvious to a person of ordinary skill in the art to try various concentrations (or ratios) of dye materials, in an attempt to optimize detection (using FRET), depending on the needs of various routine experimental designs, as a person with ordinary skill has good reason to pursue the known options within his or her technical grasp.

A person of ordinary skill in the art would have reasonable expectation of success of achieving such modifications since all the cited Dai references have demonstrated the success in generating various microcapsules comprising various layers labeled with fluorescent dyes.

Double Patenting

22. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the “right to exclude” granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned

Art Unit: 1639

with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

'989

23. Claim 26 and 28 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 9-12 of copending Application No. 11/717,989 (PGPUB 20070224345; referred to as '989 application) Although the conflicting claims are not identical, they are not patentably distinct from each other because the claimed invention of the '989 application reads on the instant claimed invention.

The '989 application claims a capsule having multiple layers with pigments (e.g. claim 9). The '989 application also claims diameters of below 200 nm and layer thickness of 5 nm. Although the application does not explicitly recite at least three layers, it would have been prima facie obvious to add additional layers.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sue Liu whose telephone number is 571-272-5539. The examiner can normally be reached on M-F 9am-3pm.

Art Unit: 1639

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christopher Low can be reached at 571-272-0951. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Sue Liu/
Primary Examiner, AU 1639
4/16/09